

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 17-6-1937 When handed in at Local Office 25. 6. 1937 Port of Glasgow  
 No. in Survey held at Gretnock Date, First Survey 22. 4. 37 Last Survey 21-6-1937  
 Reg. Book. 90270 on the M.V. "SAN CIPRIANO" (Number of Visits 6)  
 Built at Glasgow By whom built Blythwood S.B. & Co. Ltd Yard No. 45 When built 1937  
 Owners Eagle Oil Shipping Co. Ltd Port belonging to London  
 Electric Light Installation fitted by Group Electric Co. Ltd Contract No. 45 When fitted 1937  
 Is the Vessel fitted for carrying Petroleum in bulk Yes

Tons { Gross 7966  
 Net 4767

**System of Distribution** Two wire  
**Pressure of supply for Lighting** 110 volts, Heating — volts, Power 110 volts.  
**Direct or Alternating Current, Lighting** Direct **Power** Direct  
 If alternating current system, state frequency of periods per second —  
 Has the **Automatic Governor** been tested and found efficient when the whole load is suddenly thrown on or off Yes  
**Generators**, do they comply with the requirements regarding temperature rise Yes, are they compound wound Yes  
 are they over compounded 5 per cent. Yes, if not compound wound state distance between each generator —  
 Where more than one generator is fitted are they arranged to run in parallel Yes, is an adjustable regulating resistance fitted in series with each shunt field Yes Have certificates of test results for machines under 100 kw. been submitted and approved Yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing —  
 Are all terminals accessible, clearly marked, and furnished with sockets Yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched Yes Are the lubricating arrangements of the generators as per Rule Yes  
**Position of Generators** In Main Engine Room bottom platform., is the ventilation in way of the generators satisfactory Yes are they clear of all inflammable material Yes if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators — and —, are the generators protected from mechanical injury and damage from water, steam or oil Yes, are their axes of rotation fore and aft Yes  
**Earthing**, are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers and their respective generators in metallic contact Yes **Main Switch Boards**, where placed In Main Engine Room near generators.  
 If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard —  
**Switchboards**, are they placed in accessible positions, free from inflammable gases and acid fumes Yes, are they protected from mechanical injury and damage from water, steam or oil Yes, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards — and —, are they constructed wholly of durable, non-ignitable non-absorbent materials Yes, is all insulation of high dielectric strength and of permanently high insulation resistance Yes, is it of an approved type Yes, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Indians, is the non-hygroscopic insulating material of an approved type Yes, and is the frame effectively earthed Yes Are the fittings as per Rule regarding: — spacing or shielding of live parts Yes, accessibility of all parts Yes, absence of fuses on back of board Yes, temperature rise of omnibus bars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, are moving parts of switches alive in the "off" position No are all screws and nuts securing connections effectively locked Yes are any fuses fitted on the live side of switches No  
**Main Switchgear**, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches D.P. switch of fuses for each generator. D.P. Change-over switch & D.P. fuses for each outgoing circuit  
 Are turbine driven generators fitted with emergency trip switch as per rule — Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material — **Instruments on main switchboard** 2 ammeters 2 voltmeters — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection —  
**Earth Testing**, state what means are provided at the main switchboard for indicating the state of the insulation of the system Earth Lamps **Switches, Circuit Breakers and Fusible Cut-outs**, do these comply with the requirements of the Rules Yes are the fusible cutouts of an approved type Yes have the reversed





current protection devices been tested under working conditions

Joint Boxes, Section and Distribution Boards, is the

construction, protection, insulation, material, and position of these as per rule

Cables: Single, twin, concentric, or multicore

If the cables are insulated otherwise than as per Rule, are they of an approved type

any point of the installation under maximum load

area of 0.04 square inch and above provided with soldering sockets

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with

insulating compound

not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical

damage

Support and Protection of Cables, state how the cables are supported and protected

Machinery spaces. L.C.a.B. clipped. Accommodation. L.C. clipped

If cables are run in wood casings, are the casings and caps secured by screws

separate grooves

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements

Joints in Cables, state if any, and how made, insulated, and protected

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the

holes efficiently bushed

Earthing Connections, state what earthing connections are fitted and their respective sectional areas

cables efficiently bolted and secured.

are their connections made as per Rule

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule

position and method of control of the emergency supply and how the generator is driven

Navigation Lamps, are these separately wired

are the switches and fuses grouped in a position accessible only to the officers on watch

has each navigation lamp an automatic indicator as per Rule

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected

Pump Rooms. - special pump room fitting, - gaslight

in gaslight fitting.

where are the controlling switches situated

are all fittings suitably ventilated

are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials

Heating and Cooking Appliances, are they constructed and fitted as per Rule

Searchlight Lamps, No. of

Arc Lamps, other than searchlight lamps, No. of

Motors, are their working parts readily accessible

are the brushes, brush holders, terminals and lubricating arrangements as per Rule

inflammable gases cannot accumulate and clear of all inflammable material

water, steam or oil

material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type

if not of this type, state distance of the combustible material horizontally or vertically above the motors

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing

field and motor speed regulators, starters and controllers constructed and fitted as per Rule

are required, are these fitted as per Rule

the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and

fittings

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule

## PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	16	110	146	650	1 by Oil Engine 1 by Steam Engine	Diesel Oil	Above 150°F.
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

## GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR	1	.15	37	.072	146	152	30	Rubber	L.C.a.B.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM	1	.01	7	.044	25	31	110	"	L.C.a.B.
BOILER ROOM	1	.01	7	.044	16	31	20	"	"
AUXILIARY SWITCHBOARDS	1	.075	19	.072	62	97	600	"	"
SHORE CONNECTION	1	.15	37	.072	146	152	150	"	"
ACCOMMODATION (SALOON S.B.)	1	.0225	7	.064	29	46	10	"	"
BRIDGE DECK PORT D.B.	1	.007	7	.036	13	24	80	"	L.C.
" STAR D.B.	1	.01	7	.044	16	31	30	"	"
CHAIR ROOM D.B.	1	.01	7	.044	23	31	100	"	"
NAVIGATION D.B.	1	.01	7	.044	2	31	40	"	"
ACCOMMODATION AFT S.B.	1	.04	19	.052	48	64	72	"	L.C.a.B.
PORT ALLEYWAY UPPER DECK PORT D.B.	1	.007	7	.036	11	24	90	"	"
STAR " " D.B.	1	.007	7	.036	11	24	48	"	"
ENGINEERS AFT STAR D.B.	1	.007	7	.036	15	24	48	"	"
" " PORT D.B.	1	.007	7	.036	11	24	110	"	"
WIRELESS	1	.01	7	.044	10	31	58	"	"
SEARCHLIGHT									
MASTHEAD LIGHT	1	.002	3	.029	36	78	320	"	L.C.a.B. L.C.
SIDE LIGHTS	1	.002	3	.029	36	78	50	"	L.C.
COMPASS LIGHTS	1	.002	3	.029	114	78	30	"	L.C.
PEOP LIGHTS									
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

## MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP										
ENGINE TURNING GEAR	1	1	.06	19	.064	75	83	120	Rubber	L.C.a.B.
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR S.D.B.	1	.075	19	.072	85	97	136	"	"	"
VENTILATING FANS										
GUNDER	1	1	.0225	7	.064	17	46	48	"	"
LATHE	1	1	.0225	7	.064	27	46	40	"	"
DRILLING MACHINE	1	1	.0225	7	.064	26	46	40	"	"
STANDBY FUEL SERVICE PUMP	1	1	.0045	7	.029	15	18.2	50	"	"
THEATER TANK FAN	1	1	.0045	7	.029	12.75	18.2	60	"	"
OIL PURIFIER	1	1	.007	7	.036	21	24	120	"	"

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All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

FOR TROUP, CURTIS & Co. LTD

Electrical Engineers.

Date 18/6/37.

#### COMPASSES.

Distance between electric generators or motors and standard compass

240 ft

Distance between electric generators or motors and steering compass

240 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 14 Ampères 2 feet from standard compass 2 feet from steering compass.

A cable carrying 8 Ampères 12 feet from standard compass 12 feet from steering compass.

A cable carrying 2 Ampères 14 feet from standard compass 14 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power? Yes

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted? Yes.

The maximum deviation due to electric currents was found to be Nil degrees on any course in the case of the standard compass, and Nil degrees on any course in the case of the steering compass.

BLYTHWOOD SHIPBUILDING CO. LTD.

John W. Stewart

Builder's Signature.

Date 21.6.37.

Is this installation a duplicate of a previous case? Yes If so, state name of vessel M.V. "SAN CONRADO"

General Remarks (State quality of workmanship, opinions as to class, &c.)

The electrical equipment of

this vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. The materials and workmanship are good.

18/6/37

Noted

True

1.7.37

Total Capacity of Generators 32. Kilowatts.

The amount of Fee ... £ 23 : - : When applied for, 10/6/37

Travelling Expenses (if any) £ : : When received, 16/6/37

R. S. Hinchison & Co. Signatures

Surveyors to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 29 JUN 1937

Assigned

SEE ACCOMPANYING MACHINERY REPORT.